Washington Latin -- Honors Geometry

Review

1. Simplifying radicals:

  

2. Geometric mean:

Find the geometric mean of 5, 12 of 4, 8 of 10, 9

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3. Triangle similarity:

What are the ways of establishing similarity between triangles?

What is the similarity ratio?

Prove similarity.

Finding the missing values in similar triangles.

10 5

x 3

These two triangles are similar. What is x?

A B

H

C D

In the above right triangle, H is the geometric mean of C and D. A is the geometric mean of C and the full hypotenuse (C + D), and B is the geometric mean of D and the full hypotenuse (C + D).

  

5. Use these geometric means and similarity to find lengths of segments in right triangles.

∠A

3 4

H

x y

What are H, x and y, given that ∠A is a right angle.

Answer Key:

1. 

2. 

3. Similarity can be established by SSS, AA, and SAS. The angles must be congruent and the sides must be proportional.

The similarity ratio is the ratio of corresponding sides of similar triangles. All corresponding sides (all linear dimensions in fact) must have the same proportionality in similar triangles.



4. Using the Pythagorean Theorem, 

The hypotenuse is 5.

Using the geometric mean, 

Using the geometric mean, 

Using the geometric mean, 